

WHAT IS CLAIMED IS:

SUB A' 1. An optimal recording method for optical recording media comprising:

5 a recording condition detecting step of when data is to be overwritten on an optical recording medium previously recorded with data a desired area thereof, detecting a recording condition used in the previous data recording; and

an overwrite condition setting step of setting a condition for overwriting the data, to be overwritten, based on the detected recording condition.

2. The optimal recording method according to claim 1, wherein the recording condition detection is carried out by reading out a recording condition previously stored in the optical recording medium.

3. The optimal recording method according to claim 1, where the recording condition detection is carried out by detecting reproduction signal characteristics of the previously recorded data.

4. An optimal recording method for optical recording media comprising the steps of:

25 reading out a reference recording condition recorded on

an optical recording medium;

recording test data while varying a recording condition with respect to the reference recording condition;

deriving an optimum recording condition, based on reproduction characteristics of the test data; and

generating information for managing the history of a recording environment variation occurring in association with the derived recording condition, and recording the generated information onto a desired area of the optical recording medium.

5. The optimal recording method according to claim 4, wherein the recording environment variation is a variation of an apparatus used to record data onto the optical recording medium.

6. The optimal recording method according to claim 4, wherein the recording environment variation is a variation in a record speed used to record data onto the optical recording medium.

7. The optimal recording method according to claim 4, wherein the history management information is an optimum recording condition meeting the recording condition variation.

8. The optimal recording method according to claim 4, wherein the history management information is an optimum recording condition meeting the recording condition variation, the history managing information being recorded in addition to management information generated for every record unit.

9. The optimal recording method according to claim 4, wherein the history management information is recorded onto a count area of the optical recording medium or respective lead-in areas of sessions of the optical recording medium.

10. The optimal recording method according to claim 4, wherein data is recorded on a desired region of the optical recording medium, along with information indicative of an optimum recording condition for the data.

11. The optimal recording method according to claim 4, wherein the optimum recording condition includes at least information for identifying an apparatus used to record data onto the optical recording medium, an optimum recording power value, and information about record speed.

12. The optimal recording method according to claim 11, wherein the optimum recording condition including the information for identifying the apparatus used to record data

onto the optical recording medium, the optimum recording power value, and the information about record speed is repeatedly recorded by an allowable number of times.

5 13. An optimal recording method for optical recording media comprising:

an optimum recording condition reading step of when data is to be overwritten on an optical recording medium previously recorded with data a desired area thereof, reading an optimum recording condition previously recorded on the optical recording medium;

an overwrite condition setting step for setting a condition for overwriting the data, to be overwritten, based on the read optimum recording condition; and

15 an overwriting step for overwriting data onto the optical recording medium under the set overwrite condition.

20 14. The optimal recording method according to claim 13, wherein the optimum recording condition includes at least information for identifying an apparatus used to record data onto the optical recording medium, an optimum recording power value, and information about record speed, and when the apparatus identification information and the record speed information detected for the previously recorded data from the
25 optical recording medium are identical to those of the

apparatus used to overwrite data, respectively, the overwriting step is conducted at the optimum recording power value detected from the optical recording medium.

5 15. The optimal recording method according to claim 14, wherein when there is an occasion corresponding to a case in which no optimum recording condition is read out from the optical recording medium, a case in which the read apparatus identification information is not identical to that of the apparatus used to overwrite data, or a case in which the read record speed information is not identical to that of the apparatus, the steps of the method comprise the steps of:

 reading the optimum recording condition previously recorded on the optical recording medium;

10 recording test data while varying a recording condition with respect to the read recording condition; *

 deriving an optimum recording condition, based on reproduction characteristics of the test data;

20 setting the derived optimum recording condition as an overwrite condition, conducting an overwriting of data under the set overwrite condition, and recording the derived optimum recording condition onto the optical recording medium.

25 16. The optimal recording method according to claim 13, wherein the optimum recording condition read out from the

optical recording medium includes an optimum recording power value, the overwrite condition setting and data overwriting steps comprise the steps of:

5 setting a power value less than the optimum recording power value included in the read optimum recording condition; and

overwriting data at the set power value.

17. The optimal recording method according to claim 13, wherein the optimum recording condition read out from the optical recording medium includes an optimum recording power value, the overwrite condition setting and data overwriting steps comprise the steps of:

15 deriving a power value for an apparatus, used to record data onto the optical recording medium, corresponding to the optimum recording power value included in the read optimum recording condition; and

overwriting data onto the optimum recording medium at the derived power value.

20 18. The optimal recording method according to claim 17, wherein the power value deriving and data overwriting steps comprise the steps of:

25 deriving an optimum recording power value for the optical recording medium;

comparing the derived optimum recording power value with the read optimum recording power value; and

overwriting data at the derived optimum recording power value when the read optimum recording power value is not less than the derived optimum recording power value.

19. An optical recording medium comprising:

a first recording area recorded with a reference recording condition adapted to recognize a reference for an optimum recording condition; and

a second recording area recorded with information for managing the history of a recording environment variation occurring in association with an optimum recording condition determined with respect to the reference recording condition.

20. The optical recording medium according to claim 19, wherein the second recording area is an area for recording management information generated for every record unit upon recording data.

21. An optimal recording method comprising the steps of:

(a) detecting a recorder identification code, an optimum recording power value, and information about record speed, as recording condition information recorded on a designated area of an optical recording medium;

(b) setting a power value not less than the detected optimum, recording power value when the detected recorder identification code and the detected record speed information are identical to a recorder identification code for an apparatus, used to record data, and a current record speed of the apparatus, respectively, and recording data at the set power value;

(c) recording test data onto the optical recording medium, and deriving an optimum power value, based on reproduction characteristics of the recorded test data, when there is no optimum recording condition detected, when the detected recorder identification information is not identical to that of the apparatus used to record data, or when the detected record speed information is not identical to the current record speed of the apparatus; and

(d) recording the derived optimum power value, the recorder identification code of the apparatus, and the current record speed information onto a designated area of the optical recording medium, as optimum recording condition information, and then recording data onto the optical recording medium at the derived optimum optical power value.